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MEMORANDUM

DATE: August 19, 1988

TO: John Osborn, FIT-RPO, USEPA, Region X

THRU: Jeffrey Villnow, FIT-OM, E&E, Seattle

FROM: John J. Roland, FIT-PM, E&E, Seattle

SUBJ: Site Inspection Reassessment/
Preliminary HRS Score for
Alcoa-Wenatchee Works
Wenatchee, Washington

REF: TDD F10-8806-08
PAN F10Z062SA

CC: William Glasser, HWD-SM, USEPA, Region X
David Bennett, HWD, USEPA, Region X

A file review for the Alcoa-Wenatchee Works Site has been conducted to assess the previously conducted Site Inspection (SI) and to develop a preliminary HRS score. Using the file and additional information, a preliminary HRS score of 18.55 was calculated based on the following information:

- A landfill was operated at the Alcoa-Wenatchee site from 1952 until 1979. This landfill was used for the disposal of 40,000 tons of spent potliners (which contain some heavy metals), an unknown quantity of asbestos and possibly trichloroethylene. In 1980 a new landfill was constructed with a PVC liner. The new landfill receives spent potliners from the Alcoa-Wenatchee site and an additional 3,500 tons of spent potliners (which is classified as extremely hazardous due to a bioassay test) from another site.

- Ground water occurs at approximately 86 feet below the ground surface. Ground water is used locally for drinking and services 1,620 people. Ground water is also used for irrigation, however, the specific acreage is unknown.

- The nearest surface water is the Columbia River, approximately 800 feet from the landfill. The Columbia River is used for agricultural irrigation, industrial, and recreational purposes.

Assumptions used to derive the score include:

- o It was not clear from the file if the 40,000 tons of spent potliners material is a hazardous waste as the pot liners passed the EP Toxicity test but do contain heavy metals. For this assessment they were assumed hazardous due to heavy metal content;
- o No observed release to ground water, surface water, or air;
- o It was assumed the landfill cover is inadequate containment;
- o No sensitive environment is known to exist within three miles of the site; and
- o It was assumed that there is a surface water intake two to three miles downgradient from the site and that it services 1-100 people.

Three on-site wells were sampled in 1987 by the Department of Ecology. At that time the two monitoring wells in the vicinity of the landfill were dry and could not be sampled. One well inside the plant showed elevated cyanide levels of 0.01 mg/l.

Additional information (i.e., surface water uses and local ground water quality) may be needed to verify the assumptions used to obtain this score. An observed release to ground water could raise the HRS score to 46.06. Due to the high potential score further investigation is recommended for this site. The site has limited access and the landfills are covered, therefore the site score should not increase significantly under the HRS II. This site is a medium priority.

JJR:rls

Facility name: ALCOA WENATCHEE

Location: WENATCHEE, WA

EPA Region: 10

Person(s) in charge of the facility:

Name of Reviewer: A Roland Date: 3/15/93

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Site has two landfills at which spent potliners are deposited. One landfill is lined (newer one) and one is not. Low level (0.01 mg/L) cyanide has been detected in one on site well. Depth to ground water < 100 feet below ground level

Scores: S_M = ~~18.84~~ S_{gw} = 31.84 S_{sw} = 4.04 S_a = 0)

S_{FE} =

S_{DC} =

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1		45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 (1) 2 3	2	2	6	
Net Precipitation	(0) 1 2 3	1	0	3	
Permeability of the Unsaturated Zone	0 (1) 2 3	1	1	3	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			6	15	
3 Containment	0 1 2 (3)	1	3	3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 (15) 18	1	~~15~~ 18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
Total Waste Characteristics Score			2~~3~~ 26	26	
5 Targets					3.5
Ground Water Use	0 1 2 (3)	3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 / 12 16 18 20 / 24 (30) 32 35 40	1	30	40	
Total Targets Score			39	49	
6 If line 1 is 45, multiply 1 x 4 x 5 / If line 1 is 0, multiply 2 x 3 x 4 x 5			18252 ~~16116~~	57,330	
7 Divide line 6 by 57,330 and multiply by 100			S_{gw} = ~~28.16~~ 31.84		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1		45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 (1) 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 (1) 2 3	1	1	3	
Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			10	15	
3 Containment	0 (1) 2 3	1	1	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 (15) (18)	1	15 18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
Total Waste Characteristics Score			26 23	26	
5 Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
Population Served/Distance to Water Intake Downstream	0 (4) 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	4	40	
Total Targets Score			10	55	
6 If line 1 is 45, multiply 1 x 4 x 5. If line 1 is 0, multiply 2 x 3 x 4 x 5			2600 2300	64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{SW} = 3.57 4.04		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

no sampling landfill covered

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	0 45	1		45	5.1
Date and Location:					
Sampling Protocol:					
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
[4] Multiply [1] x [2] x [3]				35.100	
[5] Divide line [4] by 35.100 and multiply by 100		S_a =			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	~~28.46~~ 31.84	~~792.98~~ 1013.78
Surface Water Route Score (S_{sw})	~~3.57~~ 4.04	~~12.75~~ 16.32
Air Route Score (S_a)	0	~~805.73~~
$S_{gw}^2 + S_{sw}^2 + S_a^2$		~~805.73~~ 1030.1
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		~~28.38~~ 32.09
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		~~16.41~~ 18.55

FIGURE 10
WORKSHEET FOR COMPUTING S_M

S_M = 40.75 if observed release to GW

Fire and Explosion Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)	
1 Containment	1 3	1		3	7.1	
2 Waste Characteristics					7.2	
Direct Evidence	0 3	1		3		
Ignitability	0 1 2 3	1		3		
Reactivity	0 1 2 3	1		3		
Incompatibility	0 1 2 3	1		3		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8		
Total Waste Characteristics Score				20		
3 Targets					7.3	
Distance to Nearest Population	0 1 2 3 4 5	1		5		
Distance to Nearest Building	0 1 2 3	1		3		
Distance to Sensitive Environment	0 1 2 3	1		3		
Land Use	0 1 2 3	1		3		
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5		
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5		
Total Targets Score				24		
4 Multiply 1 x 2 x 3				1,440		
5 Divide line 4 by 1,440 and multiply by 100			SFE =			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1		45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 3	1		3	8.2
3 Containment	0 15	1		15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5		15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4		20	
Distance to a Critical Habitat	0 1 2 3	4		12	
Total Targets Score				32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5				21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} =			

FIGURE 12
DIRECT CONTACT WORK SHEET